ON

SECONDARY PAROTITIS,

With Notes of Four Cases.

BY

C. O. HAWTHORNE, M.B., F.F.P.S.G.,

ASSISTANT PHYSICIAN TO THE GLASGOW WESTERN INFIRMARY; CLINICAL ASSISTANT TO THE PROFESSOR OF MEDICINE IN THE UNIVERSITY OF GLASGOW; LECTURER ON MATERIA MEDICA AND THERAPEUTICS, QUEEN MARGARET COLLEGE, UNIVERSITY OF GLASGOW.

Reprinted from the "Glasgow Medical Journal" for July, 1895.

GLASGOW:

PRINTED BY ALEX. MACDOUGALL, 68 MITCHELL STREET.

1895.

ON SECONDARY PAROTITIS,

WITH NOTES OF FOUR CASES.

—o—

Parotitis, apart from mumps, has been described as an incident in association with a considerable number of pathological conditions; and the exact relationship of these conditions to inflammation of the parotid has given rise to some diversity of opinion. One group of the cases in which a secondary parotitis has been observed is affections of the generative organs. Thus, injury of the testicle[1] has been followed by parotitis, and Trousseau[2] records a case of suppressed menstruation in which, at each monthly period, an inflammatory condition of one or other parotid region occurred. Other cases, too, have been observed in which functional disturbance of the salivary glands has coincided with the occurrence of menstruation;[3] and in one case, described by Stephen Paget,[4] swelling of the parotids appeared in successive pregnancies, and was the first subjective indication of that condition. Even the introduction of a pessary into the vagina[4] has been followed by parotitis. The development of inflammation of the parotid gland under such circumstances as those just mentioned has been regarded as the converse of what sometimes happens in mumps. Orchitis is, of course, a recognised complication of that disease, and in the same disorder female patients are liable, though less frequently, to the development of inflammatory

complications in the breasts[5] or, more doubtfully, in the ovaries.[6]

Further, it is to be noted that, in the experience of some surgeons, parotitis is specially likely to occur after operations on the female generative organs,[7] and this, too, without any indication of general pyæmia. In reference to the cause of this association between inflammatory and other disturbances of the generative organs and parotitis, various suggestions have been made. Mr. Hutchinson[8] finds an explanation difficult, "unless it be that the parotid gland and testis, when inflamed, develop elements which are mutually infective." Bumm,[9] who believes there is a special relationship between ovariotomy and parotitis, suggests that, as a result of nerve irritation following the operation, the secretion of saliva is suspended by reflex influences, and micro-organisms then enter the parotid gland through Stenson's duct.

A possible further illustration of the pathological relationships of the generative organs and the parotid gland is afforded by the occasional occurrence of orchitis[10] and (though in still more rare instances) of parotitis[11] as a result of gout.

Parotitis is also a recognised though uncommon complication of some of the specific fevers. Murchison[12] found it most frequently in typhus, and regarded its occurrence in this disease as establishing a connecting link between typhus and oriental plague. He also recognised it in relapsing fever and in enteric fever; and in the experience of other authorities it appears to have been most frequently observed in the last-mentioned. Gee[13] regards the inflammation of the parotid in these cases as the result of dryness of the mouth, the irritation extending from the buccal mucous membrane along Stenson's duct to the substance of the gland. This view has been supported by other observers, and it has been maintained that, from the very earliest appearance of the symptoms of parotitis, pressure over the duct of the parotid will cause the expulsion of a drop of pus from the orifice.[14] As the result of histological examination of the duct and gland in several fatal cases, Hanau[15] came to a similar conclusion. It is interesting,

in this connection, to note the occurrence of recurring attacks of parotitis, or at least of swelling of the parotids, in cases of xerostomia or dry mouth. Several examples of this association have been described,[16] and Mr. Hutchinson, who has recorded a number of such cases, regards the two conditions as resulting from some nervous disturbance. In the majority of the cases of this character the xerostomia has been a very chronic condition and has developed without apparent cause; but Hutchinson[17] also reports two cases in which dryness of the mouth, with painful swelling of the parotids, appeared on the third day after an injury (which subsequently proved fatal) to the abdomen. In each case the swelling disappeared in the course of a few days without suppuration. It is very difficult, under these circumstances, to regard the parotitis as pyæmic in character; and further, as there was in each of the patients, as an immediate result of the accident, copious sweating, followed by dryness of the skin as well as of the buccal mucous membrane, and the passage of an excessive quantity of urine, it seems a fair inference that the violence to the abdomen produced reflexly through the nervous system disturbance of the function of various glands, including the salivary glands. It is, of course, still open to argument that the parotitis was not a direct but an indirect result of this disturbance, the cessation of the salivary secretion giving an opportunity to germs or other irritants to reach the gland through the unoccupied Stenson's duct, or in some other way rendering the gland susceptible to the influence of septic agents.

The relation of parotitis to pelvic and abdominal lesions has received considerable attention from Stephen Paget, who has come to the conclusion that cases of parotitis associated with such lesions form a group by themselves. Paget questions the pyæmic origin of the inflammation. He has collected 101 cases[18] of parotitis following abnormal conditions in the pelvis or abdomen, and points out that in the great majority of these the parotitis, as an inflammatory event, was an isolated one; that in a considerable number of

the cases there was no suppuration; that the attack was, as a rule, unattended by rigors or by any decided rise of temperature; and that the issue of the case was in no practical sense prejudiced by the parotitis. These facts he considers conclusive against the suggestion that the inflammation of the parotid was due to any "ordinary form" of pyæmia. Paget also rejects the suggestion that the inflammation travels from the buccal cavity backwards along the parotid duct, and instances, in support of this view, the fact that it is quite exceptional in these cases to find the *socia parotidis* specially affected, or attacked at an earlier date than the main body of the gland. The view that Paget advocates is that there is some special connection, through the nervous system, between the abdominal and pelvic viscera and the salivary glands, and that lesions of the viscera lead reflexly to a congestion of the gland which may proceed to inflammation, and even to suppuration. And in support of his position, he refers to the recognised influence which morbid conditions of the stomach exercise upon salivary secretion; to the experiments (upon dogs) in which inhibition of the secretion of saliva is produced when a coil of intestine is withdrawn from the abdomen, the secretion returning when the intestine is replaced; and to the occasional occurrence of salivation during pregnancy.

Besides Paget's cases, other examples of the occurrence of parotitis in connection with abdominal and pelvic lesions have been put on record. Christopher Martin,[19] after an experience including a thousand cases of abdominal section, speaks of it as a "curious complication," which "usually occurs during the second or third week, and may nearly always be traced to a septic cause." It may be noted, however, that other surgeons have observed the development of parotitis at a much earlier date. Thus, in Mr. Jalland's case, already alluded to, the parotid swelling appeared on the third day after operation. Fagge[20] describes parotitis in a case of intestinal obstruction due to cancer of the sigmoid flexure; Taylor[21] observed it following an operation for imperforate anus; H. C. Cameron[22] after abdominal section; Middleton[23] in a case of fæcal

tumour, and as a complication in pernicious anæmia[24]; Grisolle,[25] from experience in the Vienna Hospital, notes it as occurring on five occasions in a total of upwards of 5,000 cases of pneumonia; Gowers[26] describes parotitis as an event in a fatal case of peripheral neuritis following a stab wound under the left clavicle, the wound "healing well;" Fagge mentions it as an occasional complication of influenza[27] and of yellow fever[28]; two cases have been noted in which parotitis complicated an attack of illness regarded as of the nature of acute rheumatism[29]; and Gee[13] records the occurrence of parotitis in a fatal case of chorea accompanied by a very dry state of the mouth and tongue.

The four cases briefly recorded below have all come under my observation in hospital practice. The first was regarded, without much doubt, as a case of gastric ulcer, though the rapidity of the convalescence may possibly introduce a question as to the accuracy of the diagnosis. In the second case, the slight development of gastric symptoms other than the hæmatemesis, and the prompt improvement of the patient leave it an open question whether the case is to be marked as one of "latent" gastric ulcer, or as belonging to the group described by Trousseau and others, in which hæmatemesis occurs without any ulceration of the gastric mucous membrane. In neither of these patients was there any fact, either in the history or the physical diagnosis, to suggest cirrhosis of the liver or other cause of portal obstruction. The occurrence of parotitis in cases of gastric ulcer and hæmatemesis must, I think, be a most unusual event. In Mr. Paget's[18] list of 101 cases of secondary parotitis, 18 are classified as following disease or injury of the alimentary canal, and in only one of these was there any question of the existence of a gastric ulcer. Even in this one the diagnosis was doubtful, and as the patient was at the time suffering from "two small bed-sores," it by no means follows that the parotitis was consequent upon the gastric ulceration, allowing that this was actually present.

The third case illustrates the occurrence of parotitis in lobar pneumonia; it provides an exception to the experience of Grisolle,[25] who found this complication a serious one, as in his cases the inflammation usually terminated in suppuration or gangrene. In the fourth case the parotitis may fairly be regarded as following the appearance of purulent matter in the peritoneal cavity.

Case I.—Jean J., æt. 42, unmarried. The history gives a record of epigastric pain, with almost constant vomiting, of three weeks' duration, and, on the morning of admission to the hospital, the occurrence of a free hæmatemesis. Previous health good, except for mild attacks of gastric disturbance at intervals during the last three years. Under rest in bed, the use of bismuth subnitrate, and the absence of solid food, the stomach symptoms soon subsided, but a fortnight after admission pain was complained of under the right ear; the right parotid region rapidly became swollen and extremely tender, the temperature rising to 101° F. In the course of forty-eight hours, however, the temperature fell to normal, and the swelling gradually disappeared without suppuration.

Case II.—Janet L., æt. 26, unmarried, admitted to the Infirmary on account of a severe hæmatemesis extending over twenty hours. The hæmatemesis was repeated three days after admission, and was followed by melæna. Four days after the second hæmorrhage, evidences of right parotitis appeared, the temperature running up to 101·8° F. Under treatment, the local condition improved and fever subsided, but after a few days' interval pain and swelling returned, and the temperature reached 102·2° F. Fluctuation could now be detected, and a large quantity of pus was evacuated on incision. The patient had always enjoyed good health, but had been apt to vomit her food from childhood. For a week before the hæmorrhage she had experienced some pain after food, but this had not been severe, and there had not been at this time any vomiting. Physical examination negative, except for

undue pulsation in the abdominal aorta. After relief of the parotitis by incision, gastric symptoms ceased to be apparent, and patient made a rapid recovery.

Case III.—Mary I., æt. 17, admitted with pneumonia of left lower lobe; crisis distinct on ninth day. During the next ten days patient remained well, except for a slight rise of temperature which soon passed away and for which no explanation could be found. At the end of this time she complained of pain at the left angle of the jaw and headache, and the temperature rose to 103·6° F.; no rigors; fulness and tenderness were detected over the left parotid gland. In the course of three days the temperature fell to normal, and all the symptoms had disappeared; subsequent convalescence uninterrupted.

Case IV.—Thomas B., æt. 46. This patient was the subject of aortic disease, with amyloid changes in the viscera, and evidences of syphilis in the liver. In the latter part of his illness ascites became troublesome, and six days before death the abdomen was tapped. Two days after this both parotid glands became much swollen and very painful, and remained so until death. *Post-mortem* examination revealed the changes mentioned above, also the presence of fluid with soft yellowish fibrinous exudation in the peritoneum, and pus infiltrated through each parotid gland.

It cannot be claimed that these cases contribute any very definite support to any of the various theories suggested to explain secondary parotitis. But it may be observed that, in each one of them, opportunity existed for the entrance of septic matter into the blood, and it is, therefore, at least possible that, under certain circumstances, the parotid gland may discharge an excretory as distinct from a secretory function, and that, in the act of excreting septic or other materials, it may be "irritated" into a state of inflammation or even suppuration. That the secretion of saliva may be

influenced reflexly through the nervous system there can be no doubt, but it is difficult to believe that an inflammatory swelling or suppuration can be explained in this way. And it may be fairly questioned whether the swelling of the parotid gland that is known to occur at intervals in cases of chronic xerostomia, and other conditions, is of the same nature as the parotid inflammations that follow lesions in various parts of the body. If secondary parotitis were due to the passage of irritants from the buccal cavity into Stenson's duct, one would certainly look for its more frequent occurrence, considering the large number of cases in which, with febrile phenomena, there is extreme dryness of the buccal mucous membrane.

REFERENCES.

[1] Hutchinson, *Archives of Surgery*, vol. iii, p. 176.

[2] *Clinical Medicine* (New Sydenham Society), vol. ii, p. 280.

[3] Goodell, *Practitioner*, 1886, vol. i, p. 367.

[4] *Lancet*, 1886, vol. i, p. 732.

[5] Trousseau, *Clinical Medicine*, vol. ii, p. 279.

[6] Comby, *Year-Book of Treatment*, 1894, p. 327.

[7] Moricke, *Medical Times and Gazette*, 1881, vol. ii, p. 291 ; Goodell, *Medical Times and Gazette*, 1885, vol. ii, p. 884 ; Jalland, *Lancet*, 1886, vol. ii, p. 917.

[8] *Archives of Surgery*, vol. iii, p. 176.

[9] *British Medical Journal*, 1887, vol. ii, p. 1396.

[10] Paget, *Clinical Lectures and Essays*, p. 364.

[11] *Royal Medical and Chirurgical Society's Transactions*, 1887, vol. lxx, p. 217.

[12] *The Continued Fevers* (third edition), p. 219.

[13] *Medical Times and Gazette*, 1884, vol. i, p. 865.

[14] *Medical Times and Gazette*, 1874, vol. i, p. 513.

[15] *Lancet*, 1889, vol. i, p. 1201.

[16] Hutchinson, *Archives of Surgery*, vol. iii, p, 323 ; Harris, *British Medical Journal*, 1894, vol. ii, p. 1314 ; Battle, *British Medical Journal*, 1895, vol. i, p. 365.

[17] *Archives of Surgery*, vol. iii, p. 97.

[18] *British Medical Journal*, 1887, vol. i, p. 613.

[19] *The After-Treatment of Cases of Abdominal Section* (Simpkin, Marshall & Co., 1894), p. 46.

[20] *Principles and Practice of Medicine* (second edition), vol. ii, p. 304.

[21] *British Medical Journal*, 1887, vol. i, p. 828.

[22] *Glasgow Medical Journal*, September, 1887.

[23] *Clinical Records*, 1894, p. 15.

[24] *Glasgow Medical Journal*, January, 1893, p. 54.

[25] *Ziemssen's Cyclopedia of the Practice of Medicine*, vol. v, p. 122.

[26] *Diseases of the Nervous System*, vol. i, p. 92.

[27] *Principles and Practice of Medicine* (second edition), vol. ii, p. 276.

[28] *Principles and Practice of Medicine* (second edition), vol. i, p. 357.

[29] *British Medical Journal*, 1885, vol. ii, p. 14.

[30] *British Medical Journal*, 1887, vol. i, p. 676.